

ABSTRACT OF THE DISCLOSURE

A molten glass pump preferably includes one or more pumps which form either a single-stage apparatus or are combined in series to form a multi-stage apparatus. The exact configuration depends on the required process pressure and the required degree of glass homogenization. Examples of the invention include an auger pump and a mixing auger pump which have varying degrees of mixing action, as well as a homogenizing pump which provides some pumping action but is primarily a homogenizer. All three pumps preferably include a centerline flow recirculation feature which remixes inhomogeneous glass into the incoming glass stream. A counter-rotating sleeve, which straightens the glass flow exiting the apparatus and provides an additional flow recirculation path, is also preferably included.

10